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EXAMINER

BHARADWAJ, KALPANA

ART UNIT	PAPER NUMBER
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2129

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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DETAILED ACTION

1. This Office Action is in response to an AMENDMENT entered May 12, 2008 for the patent application 10/822,066 filed on Apr 08, 2004.
2. All prior office actions are fully incorporated into this Office Action by reference.

Status of Claims

3. Claims 1-23 are pending.

Examiner Recommendation

4. *In the event that the applicant chooses to file a response, it is recommended that the independent claim be narrowed down to include specific sets of parameterizations, especially the ones relating to operating system patches.*

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-5, 8-16 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold (US 2004/0243692, referred to as **Arnold**), and further in view of Biebesheimer, (USPN 2002/0107843, referred to as **Biebesheimer**).

The applicant's invention is referred to as **Fawcett**.

As to Claim 1, 14, 22, 23,

Arnold discloses a method of identifying at least one exceptional managed system amongst a set of comparable managed systems, each managed system (**Arnold**, ¶ 0001: managed computer system and storage systems) having a number of system configuration attributes, the method comprising:

selecting a set of managed systems; (**Arnold**, ¶ 0022: storage-using application, storage infrastructure) selecting a set of parameterizations relating to the managed systems; (**Arnold**, ¶ 0044: group of constraints.)

(The applicant discloses (**Fawcett**, ¶ 0017) that parameterization is a constraint.) determining a pattern (not further defined; reads on e.g., **Arnold**, ¶ 0044: usage patterns; **EN**: As is evident by the applicant's own admission, a pattern reads on e.g., a model or a set of rules see **Fawcett**: ¶ 0018) for each of the parameterizations based on the system configuration attributes; (not further defined: reads on e.g., **Arnold**, ¶ 0023: configuration information; ¶ 0007: autonomically allocating an reallocating storage) comparing substantially each of the managed systems to substantially each of the patterns; (**Arnold**, ¶ 0045: comparing allocation request, 0049 checked against the attributes) and isolating (not further defined: reads on e.g., identifying computer systems

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and/or components of a computer system or network in the process of setting up a quality of service/QOS connection **Arnold**, ¶ 0045. Computer components are isolated when guaranteeing a QOS connection because after a QOS connection is set up and guaranteed, the computer system/network manager cannot allow data sent by the client to travel on just any part of the network or through just any node in the network. Therefore, during call set up the network administrator/manager isolates which nodes in a network can be used in order to guarantee the QOS for the client.)

Reading the claim in light of the specification, “isolation” reads on “identifying” (see e.g., **Fawcett** p4 lines 4-10). Also, isolating a managed system is inherent because comparing an incoming allocation request with the available attributes and matching the request, results in so called “isolating” a system based on the comparison of a managed system based on the comparing (**Arnold**, ¶ 0045: associating an allocation request);

Although it can be argued that Arnold discloses machine learning in the sense that policies and rules (0025 or 0038) are used and machines (e.g., computer systems) learn which nodes in a network, Arnold fails to particularly call for patterns being determined by a “supervised” machine learning algorithm.

However, Biebesheimer teaches determining patterns by a supervised machine learning algorithm (**Biebesheimer**, ¶ 0015: supervised machine learning). Arnold and Biebesheimer are from the same field of endeavor, resource selection and classification. It would have been

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obvious to one of ordinary skill in the art to have modified Arnold's resource allocation with supervised machine learning, for the benefit of classifying based on relevance to the user.

As to Claim 2,

Arnold modified by Beibesheimer, discloses the method of claim 1, wherein the managed systems are computer systems. (**Arnold, ¶ 001**)

As to Claim 3,

Arnold modified by Beibesheimer, discloses the method of claim 2, wherein the system configuration attributes include at least one of the following:

operating system patches; (**Arnold, ¶ 0022: operating systems**)

active processes;

installed application software programs;

memory configuration; (**Arnold, ¶ 0022: local memory**) and

peripheral devices. (**Arnold, ¶ 0022: disk drives**)

As to Claim 4, 15,

Arnold modified by Beibesheimer, discloses a method of claim 1, wherein selecting of the set of managed systems includes classification of the systems in accordance with a system attribute. (**Arnold, ¶ 0026: service class comprising availability, space requirements**).

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As to Claim 5, 16,

Arnold modified by Beibesheimer, discloses a method according to claim 1, further comprising allocating a resource to any system that has been isolated. (**Arnold**, abstract: allocation of storage resources).

As to Claim 8,

Arnold modified by Beibesheimer, discloses a method according to claim 1, further comprising assigning a priority value to an isolated system (**Beibesheimer**, ¶ 0073: specify resource priorities).

It would have been obvious to one of ordinary skill in the art to have modified Arnold's resource allocation with specific resource priorities for the benefit of selecting, sequencing and weighting the parameters (**Beibesheimer**, ¶ 0073).

As to Claim 9, 19,

Arnold modified by Beibesheimer, discloses a method according to claim 8, further comprising compiling a list of isolated systems (**Arnold**, ¶ 0052: analyzing capabilities of the computer storage system and forming analysis results; also, **Arnold**, ¶ 0052: measurement and analysis component, Fig 1) and ordering the isolated systems in accordance with their priority values (**Beibesheimer**, ¶ 0073: specify resource priorities).

EN: The rationale for modifying the base reference follows the same line of reasoning as discussed in claim 8.

As to Claim 10,

Arnold modified by Beibesheimer, discloses a method according to claim 8, further comprising allocating a resource (**Arnold**, ¶ 0052: associating an allocation request) in accordance with priority values (**Beibesheimer**, ¶ 0073: specify resource priorities).

EN: The rationale for modifying the base reference follows the same line of reasoning as discussed in claim 8.

As to Claim 11, 20,

Arnold modified by Beibesheimer, discloses a method according to claim 1, wherein the supervised machine-learning algorithm (**Beibesheimer**, ¶ 0015: supervised machine learning;

EN: See claim 1 for reasons to combine) is a rule learning algorithm. (**Arnold**, ¶ 0044: usage patterns; **EN:** As is evident by the applicant's own admission, a pattern is a model or a set of rules (**Fawcett**, ¶ 0018). Therefore, a rule-learning algorithm is inherent in Arnold's disclosure because he uses usage patterns to model his system and a pattern is a set of rules).

EN: The rationale for modifying the base reference with supervised machine learning follows the same line of reasoning as discussed in claim 1.

As to Claim 12,

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Arnold modified by Beibesheimer, discloses a method according to claim 1, further comprising annotating an isolated system with a measure (**Arnold, ¶ 0017**: measurement and analysis for possible reallocation and Fig. 6) indicative of the results of the comparing, wherein the measure is based on at least one of the following:

- an extent of deviation from a pattern; (**Arnold, ¶ 0044**: quality-of-service)
- a degree of support for a pattern; (**Arnold, ¶ 0044**: quality-of-service)
- a confidence level of a pattern; (**Arnold, ¶ 0044**: quality-of-service)
- an assessment of the significance of a pattern (**Arnold, ¶ 0044**: quality-of-service for certain usage patterns); or
- a cumulative number of patterns from which the system deviates. (**Arnold, ¶ 0044**: quality-of-service)

To a person with ordinary skills in the art, a method indicative of the extent of deviation, degree of support, confidence level, assessment of the significance of a pattern and/or the cumulative number of patterns from which the system deviates are all inherently a part of quality-of-service because by definition, a quality-of-service is a measure or assessment of a system or model.

As to Claim 13,

Arnold modified by Beibesheimer, discloses s a method according to claim 12, further comprising compiling a list of isolated systems ordered in accordance with said measures. (**Arnold, ¶ 0017**: measurement and analysis for possible reallocation; **¶ 0044**: quality-of-service.)

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The art of compiling a list of systems that are ordered based on priority in accordance to the quality of service measures is well known in the art, because priority and ordering are methods of sorting which are primitive algorithms found in any text book on data structures, ex Introduction to algorithms by Cormen, Leiserson et al.

As to Claim 21,

Arnold modified by Biebesheimer, discloses a system according to claim 14, further comprising an annotation component that annotates the isolated systems with a measure (**Arnold**, ¶ 0017: measurement and analysis for possible reallocation and Fig. 6) that indicates the extent to which each isolated system deviates from the patterns. (**Arnold**, ¶ 0044: quality-of-service)

It is noted that the annotation component is inherent because by definition, a quality-of-service is a measure or assessment of a system or model which implies a system indicative of the extent of deviation from the usage pattern.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 6-7 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold (US 2004/0243692, referred to as **Arnold**) and Biebesheimer, (USPN 2002/0107843, referred to as **Biebesheimer**) and further in view of Hines (USPN 2003/0028825, referred to as **Hines**).

As to Claim 6, 17,

Arnold modified by Beibesheimer, do not explicitly disclose a method according to claim 1, wherein the set of parameterizations includes at least one parameterization relating to operating system patches.

However, Hines teaches the set of parameterizations including at least one parameterization relating to operating system patches (**Hines**, ¶ 0079: operating system, patch and other information).

Arnold, Beibesheimer and Hines are from the same filed of endeavor, computer system analysis. It would have been obvious to one of ordinary skill in the art to have combined Arnold modified by Beibesheimer's resource allocation with operating system patches, for the benefit of being able to choose analysis parameters specific to operating system patches (**Hines**, ¶ 0049).

As to Claim 7, 18,

Arnold modified by Beibesheimer, does not disclose a method according to claim 5, wherein the set of parameterizations includes at least one parameterization relating to operating patches and the step of allocating a resource to the system includes an

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analysis of whether at least one operating patch should be installed or removed from a system.

However, Hines teaches parameterization relating to operating patches (**Hines**, ¶ 0079: operating system, patch and other information) and the step of allocating a resource to the system includes an analysis of whether at least one operating patch should be installed or removed from a system. (**Arnold**, ¶ 0022: the step of specifying constraints; operating system services).

EN: The rationale for modifying the base reference with operating system patches follow the same line of reasoning as claim 6 and 17 and have been omitted for brevity.

Response to Argument

9. Applicant's arguments filed May 12, 2008 have been fully considered but they are not persuasive.

10. Regarding Applicant's arguments on page 7 :

Arnold does not teach "determining patterns for parameterizations".

Examiner's response:

The applicant discloses (**Fawcett**, ¶ 0017) that parameterization is a constraint. Arnold discloses (**Arnold**, ¶ 0044: group of constraints.) Further, Arnold discloses usage patterns (**Arnold**, ¶ 0044: usage patterns) As is evident by the applicant's own admission, a pattern reads on e.g., a model or a set of rules see **Fawcett**: ¶ 0018.

11. Regarding Applicant's arguments on page 8 :

Arnold does not teach, "comparing substantially each of the managed systems to substantially each of the patterns."

Examiner's response:

Refer to (**Arnold**, ¶ 0045: comparing allocation request, 0049 checked against the attributes).

12. Regarding Applicant's arguments on page :

Arnold does not discuss machine learning.

Examiner's response:

Applicant's arguments are moot in light of the new grounds of rejection (Arnold + Beibesheimer) dated Feb 13, 2008, which the applicant seems to have missed

Examination Considerations

13. Examiner has cited particular columns and line numbers or paragraph numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

Conclusion

14. Claims 1-23 stand rejected.
15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALPANA BHARADWAJ whose telephone number is (571)270-1641. The examiner can normally be reached on Monday-Friday 7:30am 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bharadwaj Kalpana/
Examiner, Art Unit 2129

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